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| EXAMINER | |
|---|---|
| ZEMEL, IRINA SOPJIA | |
| ART UNIT | PAPER NUMBER |
| 1796 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/600,984 | CARLSON ET AL. | |
| | Examiner | Art Unit | |
| | Irina S. Zemel | 1796 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *06 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) *7-13 and 16-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6, 14-15, 21-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-6, 14-15, 21-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The newly claimed limitation of "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material", while disclosed in the specification is not enables as it is not related to either any specific polymer, or any method of introduction of voids into polymeric material or any other materials/conditions that lead to production of material which has decreased bulk modulus while retaining the Young's modulus substantially unchanged.

Although the statute itself (cited above) does not use the phrase "undue experimentation", it has been interpreted to require that the claimed invention be enabled so that any person skilled in the art can make and use the invention without undue experimentation as stated in *Ex parte Forman*, 230 USPQ 546, 547 (Bd. Pat. App. Inter. 1986) and in *In re Wands*, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

Specifically, in *In re Wands* the Court set forth a non-exhaustive list of factors to be considered in determing whether undue experimentation would be involved in making and/or using the claimed invention. These factors include, but are not limited to : (a) the breadth of the claims; (b) the nature of the invention; (c) the state of the prior art; (d) the level of one of ordinary skill; (e) the level of predictability in the art; (f) the amount of direction provided by the inventor; (g) the existence of working examples; and (h) the quantity of experimentation needed to make or use the invention based on the content of the disclosure.

Applying these factors to claim 1, it is noted that the specification provides no direction or working examples (cf. factors (f) and (g)) for any polymer or any method of introducing voids so as to obtains materials with decreased bulk density and unchanged Young's modulus. Thus, the only portions of the specification that describe introduction of voids in polymeric material such that "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material" is disclosed on page 6, line 8 to page 7 line 6. In the referenced portion of the disclosure, however, no specific materials or methods of introducing voids are disclosed. It is noted that all of the void containing materials described throughout the specification refer to the same drawing, i.e., all of the voids and all the polymeric materials disclosed in the specification refer back to drawing references (208) and (204) respectively, Although it

appears that different ways of making such materials are disclosed throughout the specification. It is noted that the specification discloses introduction of voids via gas bubbles (blowing agents), microspheres, diffusers, air entrainers, etc., each of these methods varies significantly from another, and, clearly, produces porous materials of different structures and characteristics. No correlation between the claimed properties and ANYTHING else (methods, materials, steps, etc.) is provided in the specification. It is, therefore, impossible, based on lack of any guidance provided in the specification to make the claimed materials with the claimed properties without undue experimentation of actually carrying out hundreds and hundreds experiments within th broad scoop of claim 1 to determine how to introduce the void so that "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material" (factor (h)).

***Claim Rejections - 35 USC § 102/103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3 and 14-15,24, and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by EO 752603 to W.L. Gore and Associates (hereinafter "W.L. Gore").

The rejection is made with the assumption that the invention is enabled whch can be only in case if **all and any method** of introduction of voids disclosed in the specification of the instant application inherently are such that "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the

polymeric material without substantially altering a Younq's modulus of the polymeric material".

The rejection stands as per reasons of record.

Insofar as the newly added limitation relating to "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material", the reference does not expressly addresses this step. However, sincee the method of introducing voids (via conventional blowing agent) is identical to one of the methods disclosed in the specification of the instant application, it is reasonable believed that this step is inherently met by the disclosure of the W.L. Gore reference. The burden is shifted to the applicants to provide factual evidence to the contrary

The invention as claimed, thus, is fully anticipated/obvious by the disclosure of the W.L. Gore reference.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The rejection is made with the assumption that the invention is enabled whch can be only in case if **all and any method** of introduction of voids disclosed in the specification of the instant application inherently are such that "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the

polymeric material without substantially altering a Younq's modulus of the polymeric material".

Claims 1-4, 15 and 21-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 660082 to Andrew A.G..

The rejection stands as per reasons of record and discussion above regarding the new limitation of of "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material".

The newly added limitation relating to "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material", is not expressly addressed in the reference. However, since the method of introducing voids (via introduction of microballons) is identical to one of the methods disclosed in the specification of the instant application, it is reasonable believed that this step is inherently met by the disclosure of the Andrews AG reference. The burden is shifted to the applicants to provide factual evidence to the contrary

The invention as claimed, thus, would have been obvious from the disclosure of the reference.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andrew A.G. in combination with US 5,706,175 to Takei.

The rejection stands as per reasons of record and the discussion above applicable to the newly introduce limitation of the base claim 1.

The rejection is made with the assumption that the invention is enabled whch can be only in case if **all and any method** of introduction of voids disclosed in the specification of the instant application inherently are such that "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material".

Claims 1-3 and 15, 24, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO99/36820 to SUN Microsystems Inc., (hereinafter "SUN") in combination with US Patent 4,107,354 to Wilkenloh et al., (hereinafter Wilkenloh") or W.L. Gore.

The rejection stands as per reasons of record and discussion above regarding the new limitation of of "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material".

The newly added limitation relating to "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material", is not expressly addressed in the reference. However, since the method of introducing voids (via blowing agent) is identical to one of the methods disclosed in the specification of

the instant application, it is reasonable believed that this step is inherently met by the disclosure of the SUN reference. The burden is shifted to the applicants to provide factual evidence to the contrary

The invention as claimed, thus, would have been obvious from the combined disclosure of the cited references.

***Response to Arguments***

Applicant's arguments filed 2-6-2009 have been fully considered but they are not persuasive. The only argument presented by the applicants is that none of the primary references, i.e., W.L.Gore (EO 752603), or Sun Microsystems ( WO99/36829) or Andrews (EP 660082) disclose the limitation of "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material". The examiner agrees that none of the cited references expressly disclose this limitation. However, as discussed above, lack of expressed disclosure of a limitation does not mean that the limitation is not inherently met by the disclosure of the reference. As discussed above, since voids are introduced into polymeric materials via the same processes as disclosed In the specification i.e., via introducing microballons of via introducing gas bubbles using blowing agents, and in view of the applicants statement that "In a further example, the introduction of the voids 208 into the polymeric material 204 promotes the decrease in the bulk modulus without substantially altering a Young's modulus of the polymeric material 204" (without providing any specific details what the

referenced "further example" may be), it is reasonable believed, as discussed above, that at least one or all of the methods disclosed in the primary references (which methods correspond to the method of void introduction disclosed in the instant specification), inherently result in the materials in which of "introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Younq's modulus of the polymeric material".

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Irina S. Zemel/
Primary Examiner, Art Unit 1796

Irina S. Zemel
Primary Examiner
Art Unit 1796

ISZ